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Art Unit: 3739

CLMPTO 07/21/03 L.F.

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- 1. An apparatus for controlling a cutting efficiency of an electromagnetically induced mechanical cutter, comprising:
 - (a) an electromagnetic energy source for focusing electromagnetic energy into a volume of air adjacent to a target surface;
 - (b) a user input device for specifying one of a high resolution cut and a low resolution cut, and for specifying one of a deep-penetration cut and a shallow-penetration cut; and
 - (c) an atomizer responsive to the user input device for generating a combination of atomized fluid particles, and for placing the user-specified combination of atomized fluid particles into the volume of air adjacent to the target surface, the atomizer generating:
 - (1) a combination of atomized fluid particles comprising relatively small fluid particles, in response to a user input specifying a high resolution cut;
 - (2) a combination of atomized fluid particles comprising relatively large fluid particles, in response to a user input specifying a low resolution cut;
 - (3) a combination of atomized fluid particles comprising a relatively low-density distribution of fluid particles, in response to a user input specifying a deep-penetration cut; and
 - (4) a combination of atomized fluid particles which comprises a relatively high-density distribution of fluid particles, in response to a user input specifying a shallow-penetration cut,

wherein the focused electromagnetic energy from the electromagnetic energy source has a wavelength which is

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substantially absorbed by the atomized fluid particles in the volume of air adjacent to the target surface, and wherein the absorption of the focused electromagnetic energy by the atomized fluid particles causes the atomized fluid particles to explode and impart mechanical cutting forces onto the target surface.